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United States Patent [19]

Hawkins

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[45] **Date of Patent: Apr. 27, 1999**

[54] **PLASTIC WRAP PIERCING-CUTTING DEVICE**

[76] Inventor: **Jennifer B. Hawkins**, 33 Colleen Ct., Kendall Park, N.J. 08824

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[51] **Int. Cl.**[6] **B26B 1/00**; B26B 3/00

[52] **U.S. Cl.** **30/294**; 30/2; 30/DIG. 3

[58] **Field of Search** ..... 30/129, 138, 139, 30/294, DIG. 3, 2

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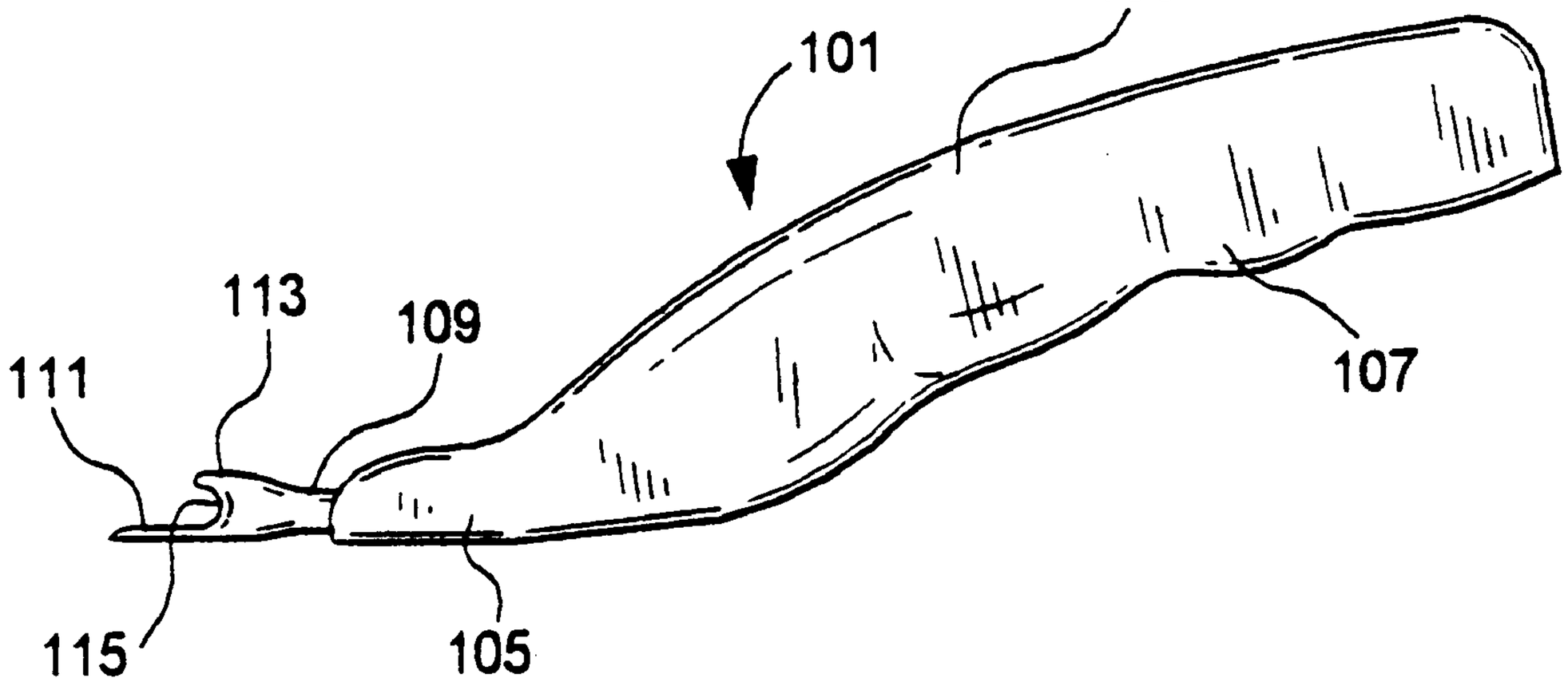
Primary Examiner—Douglas D. Watts
Attorney, Agent, or Firm—Kenneth P. Glynn, Esq.

[57] **ABSTRACT**

A piercing-cutting device for plastic wrap removed from an object, which includes a handle, a complex blade connected to the handle, the complex blade having a piercing blade section and a cutting blade section, the piercing blade section and the cutting blade section being at substantially right angles to one another, and the cutting blade section being a concave, crescent cutting blade. In some present embodiments, the piercing blade section and the cutting blade section are located contiguously and establish a generally L-shaped or T-shaped relationship relative to one another. In other embodiments the handle is elongated with an imaginary centerline and the complex blade is connected to the handle so as to extend outwardly therefrom at a substantially right angle from the imaginary center line. In yet other present embodiments, the piercing-cutting device of the handle has a front and the complex blade extends outwardly from the front of the handle.

20 Claims, 4 Drawing Sheets



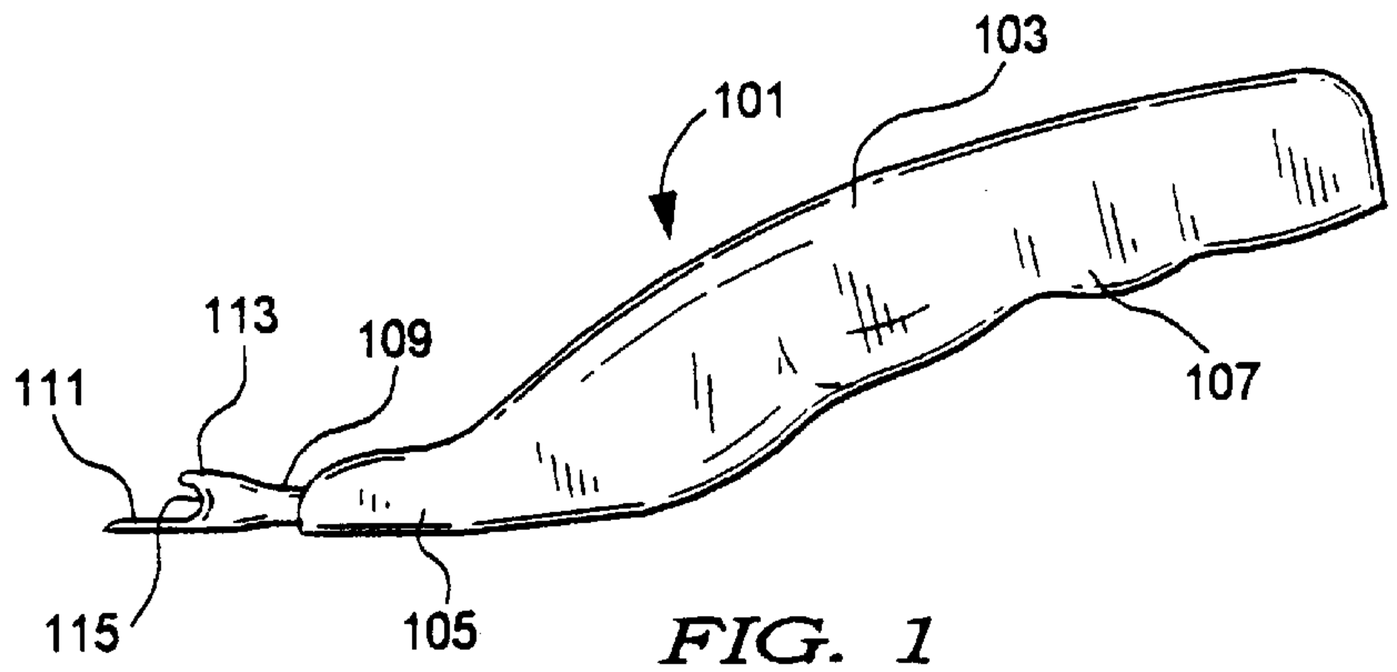


FIG. 1

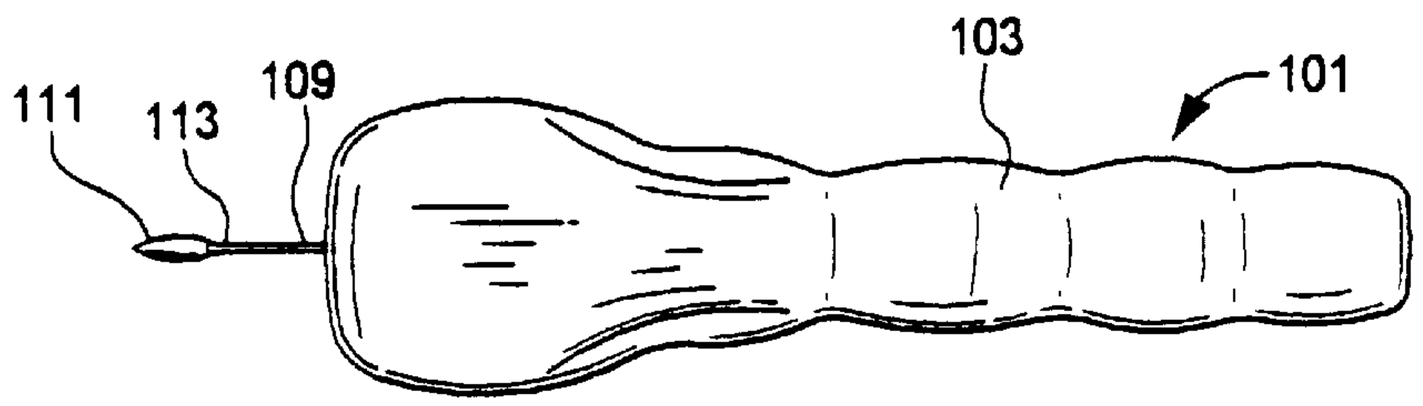


FIG. 2

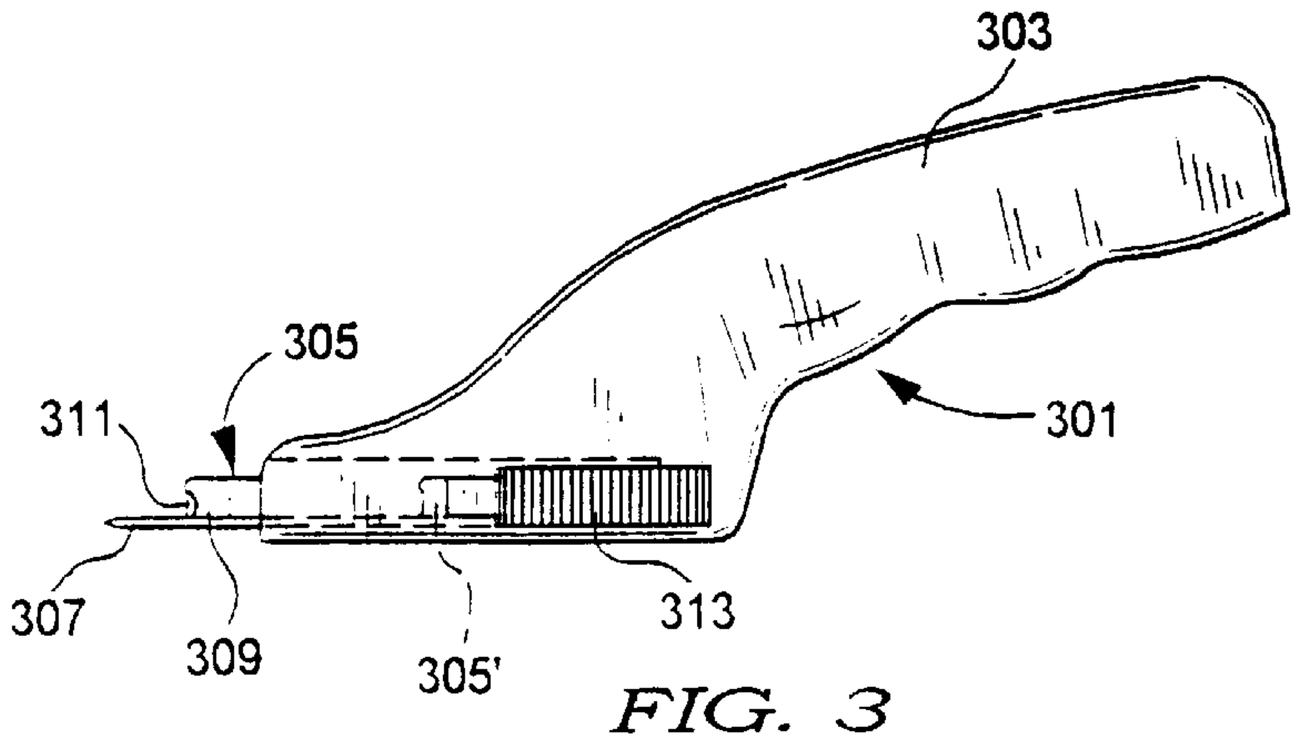


FIG. 3

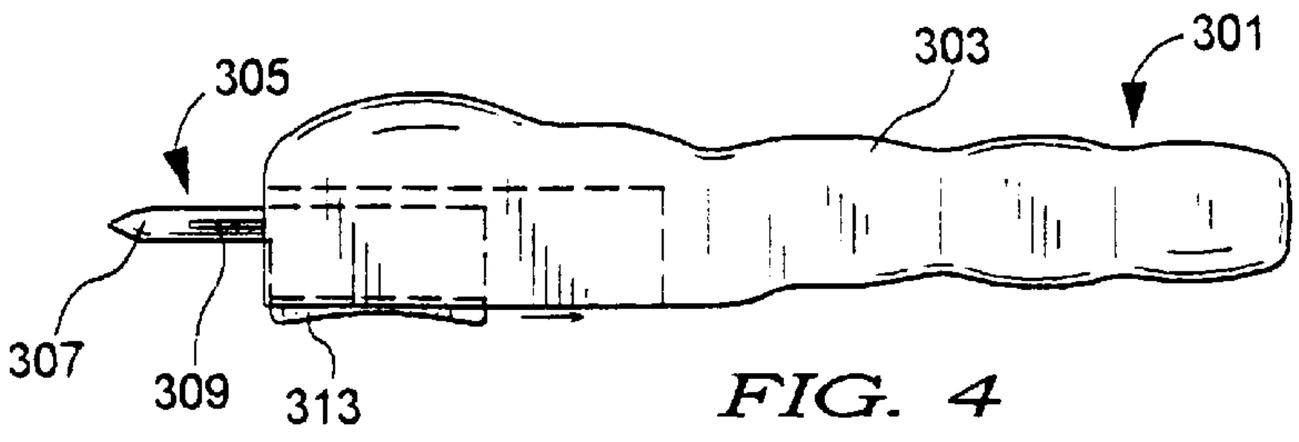


FIG. 4

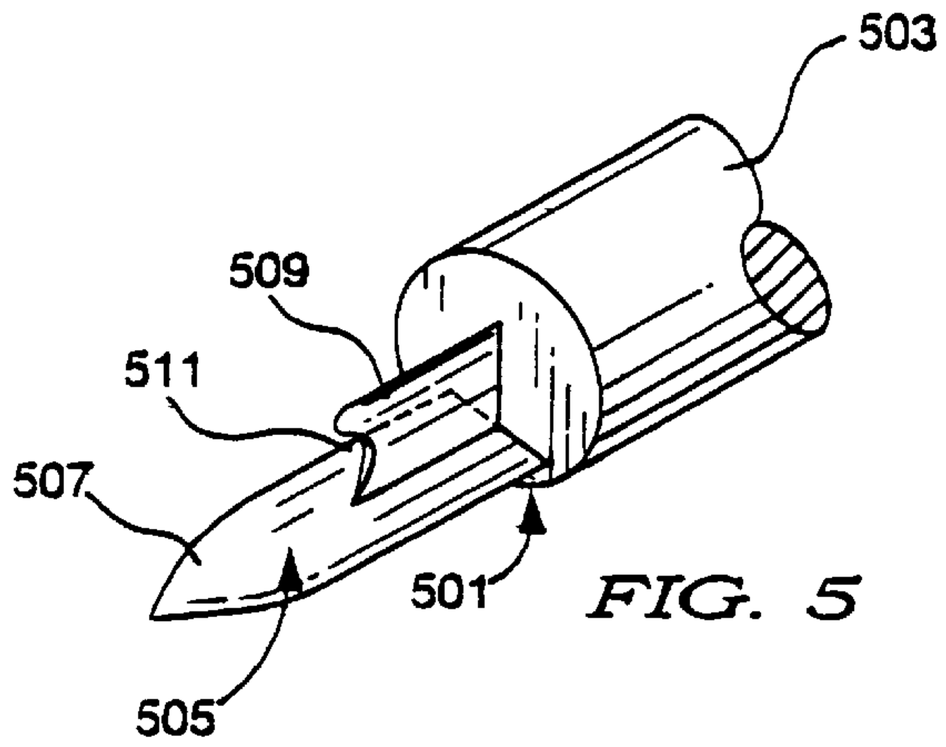


FIG. 5

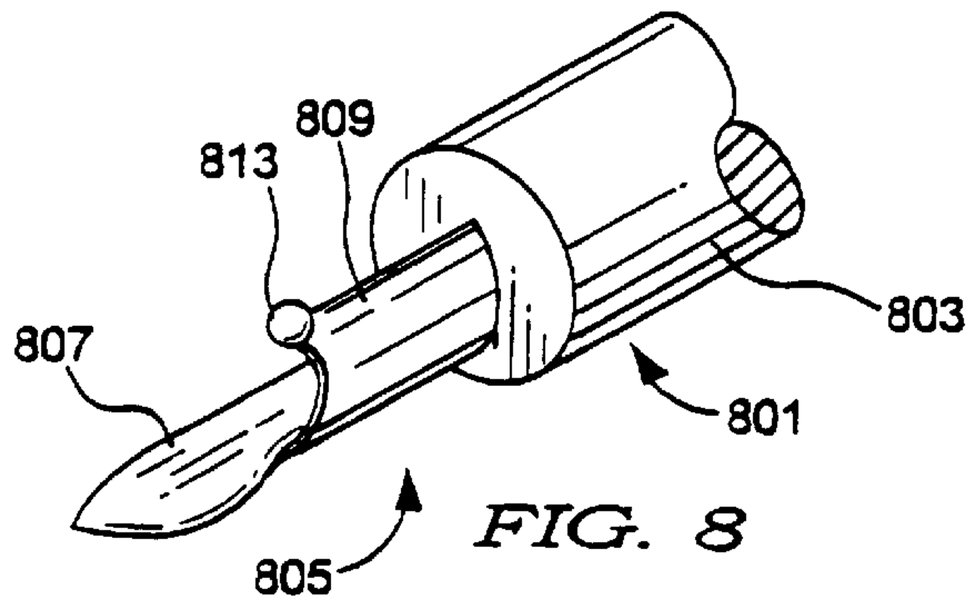


FIG. 8

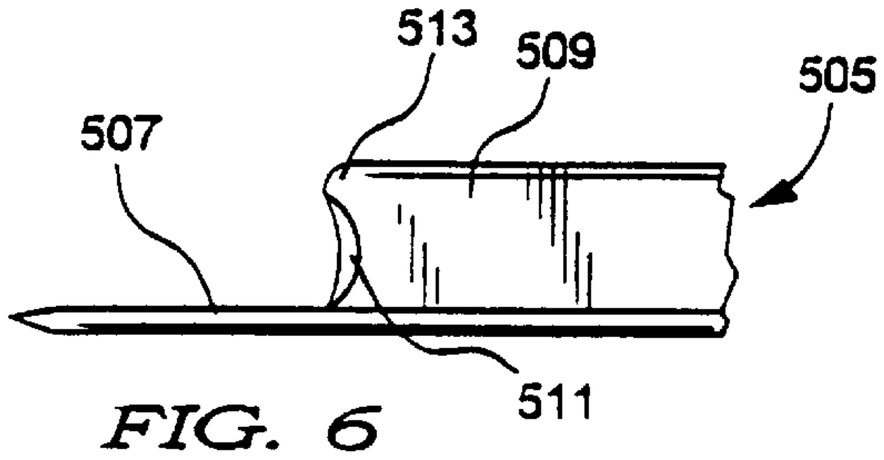


FIG. 6

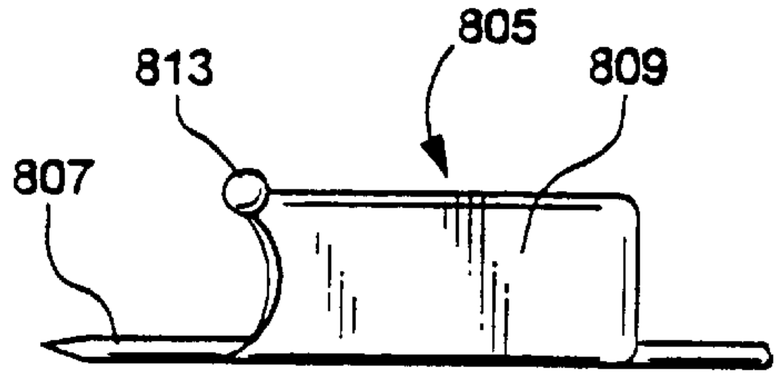


FIG. 9

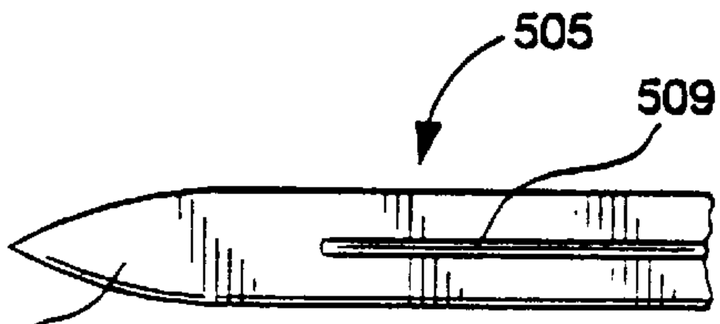


FIG. 7

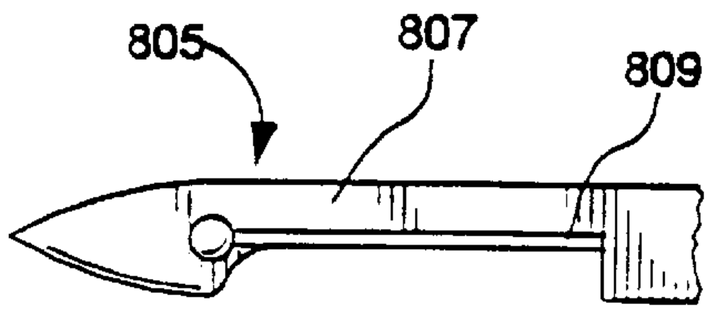


FIG. 10

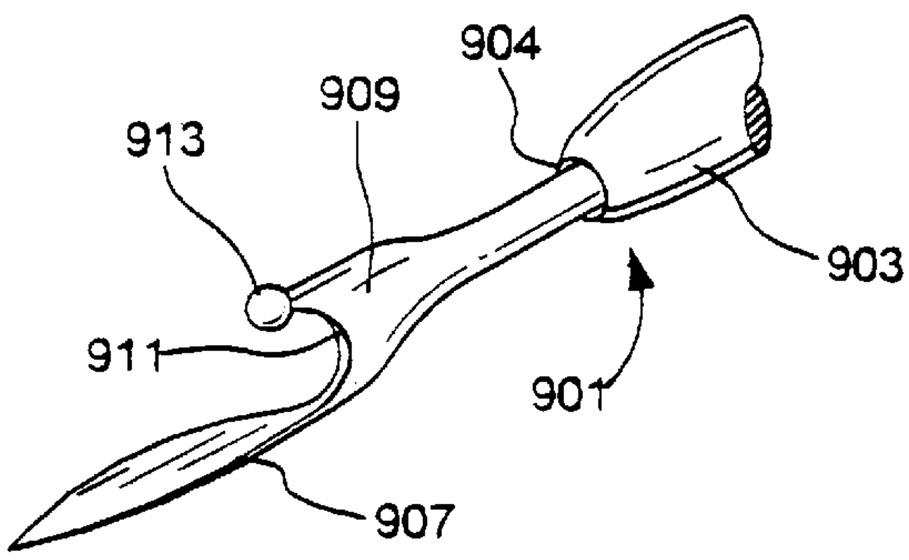


FIG. 11

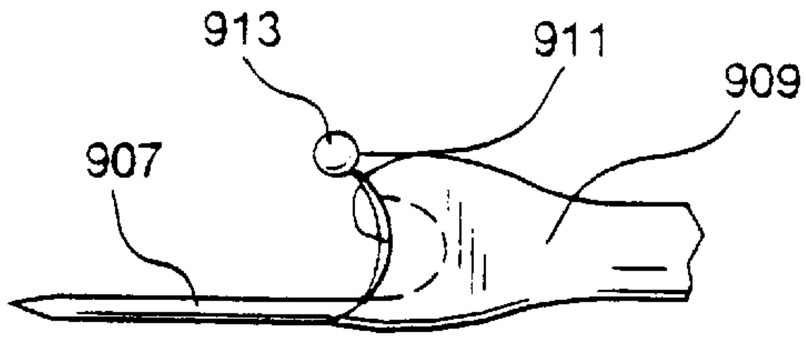


FIG. 12

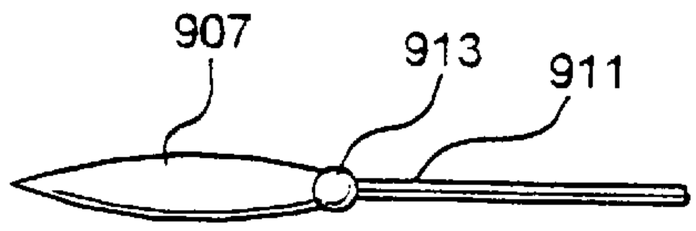


FIG. 13

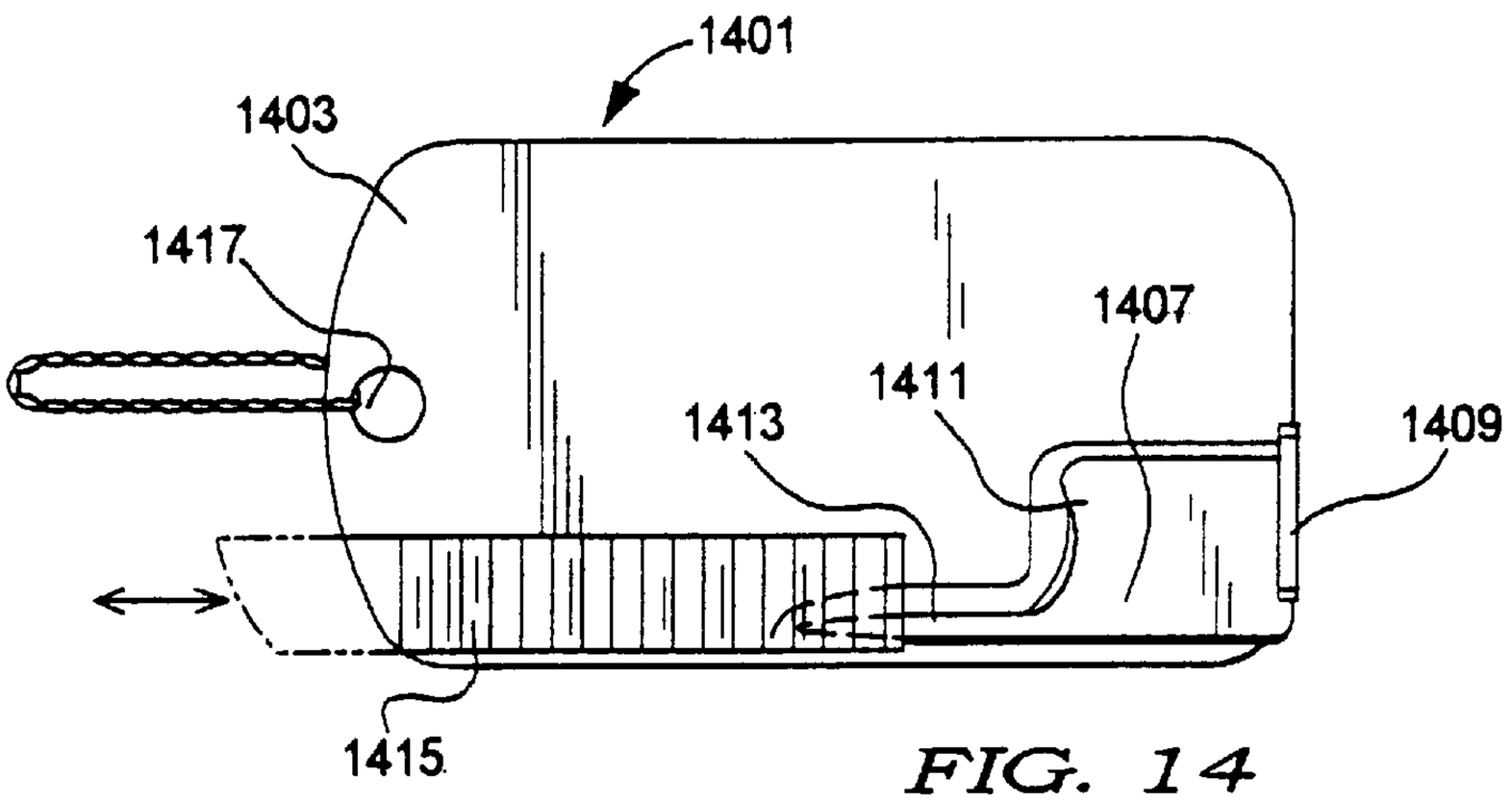


FIG. 14

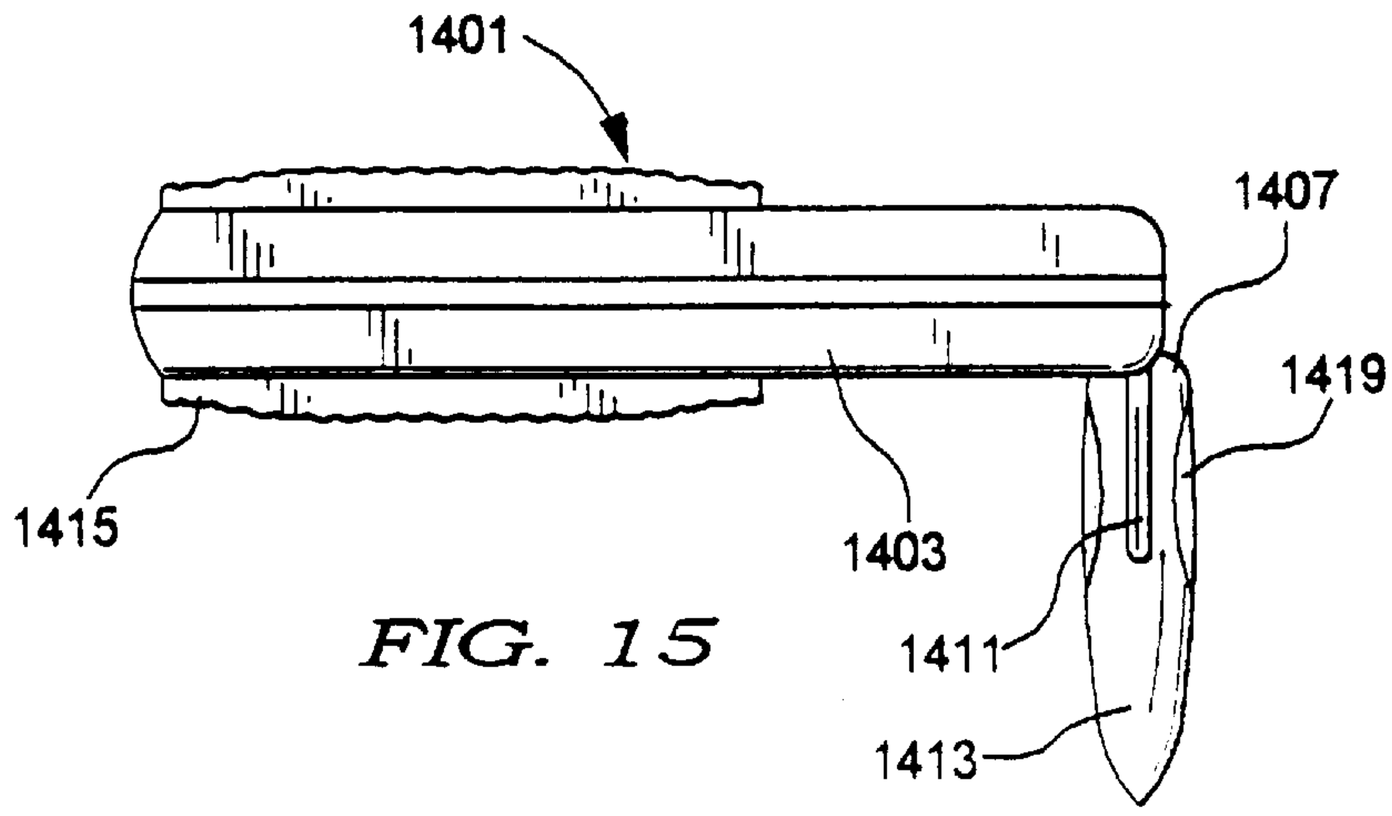


FIG. 15

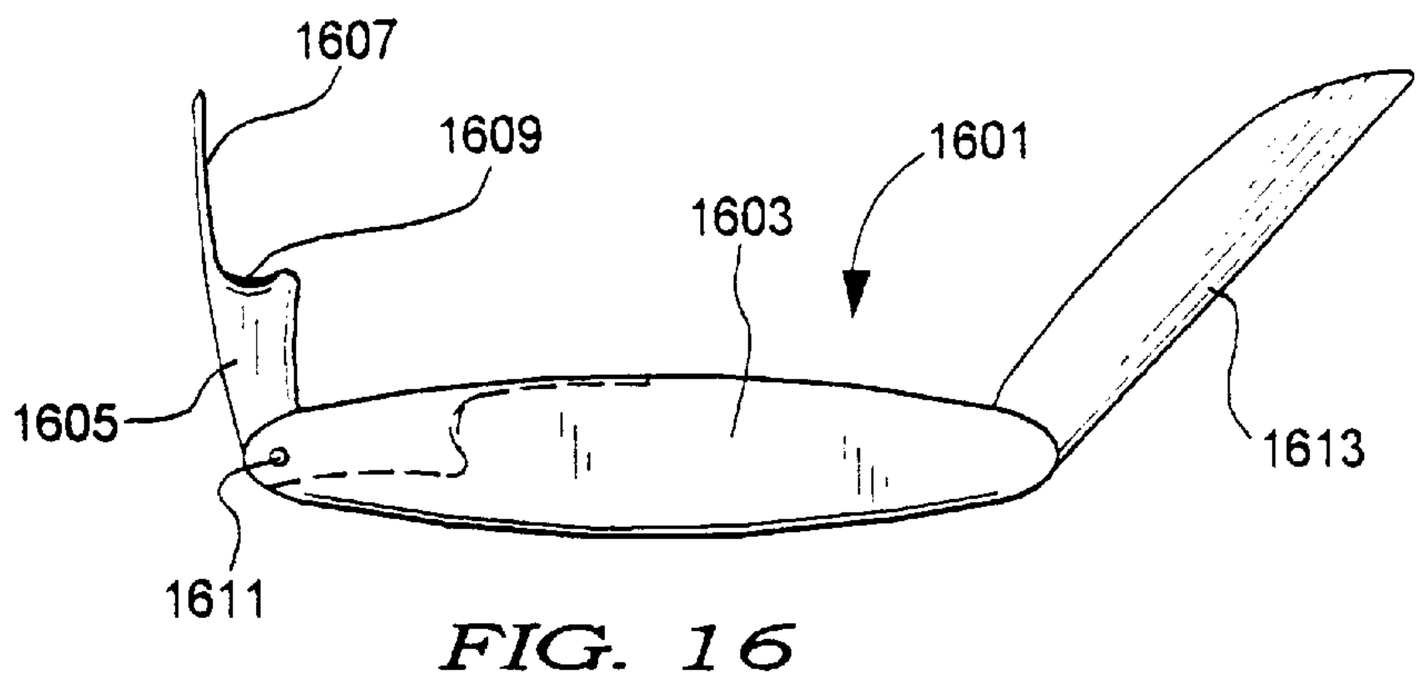


FIG. 16

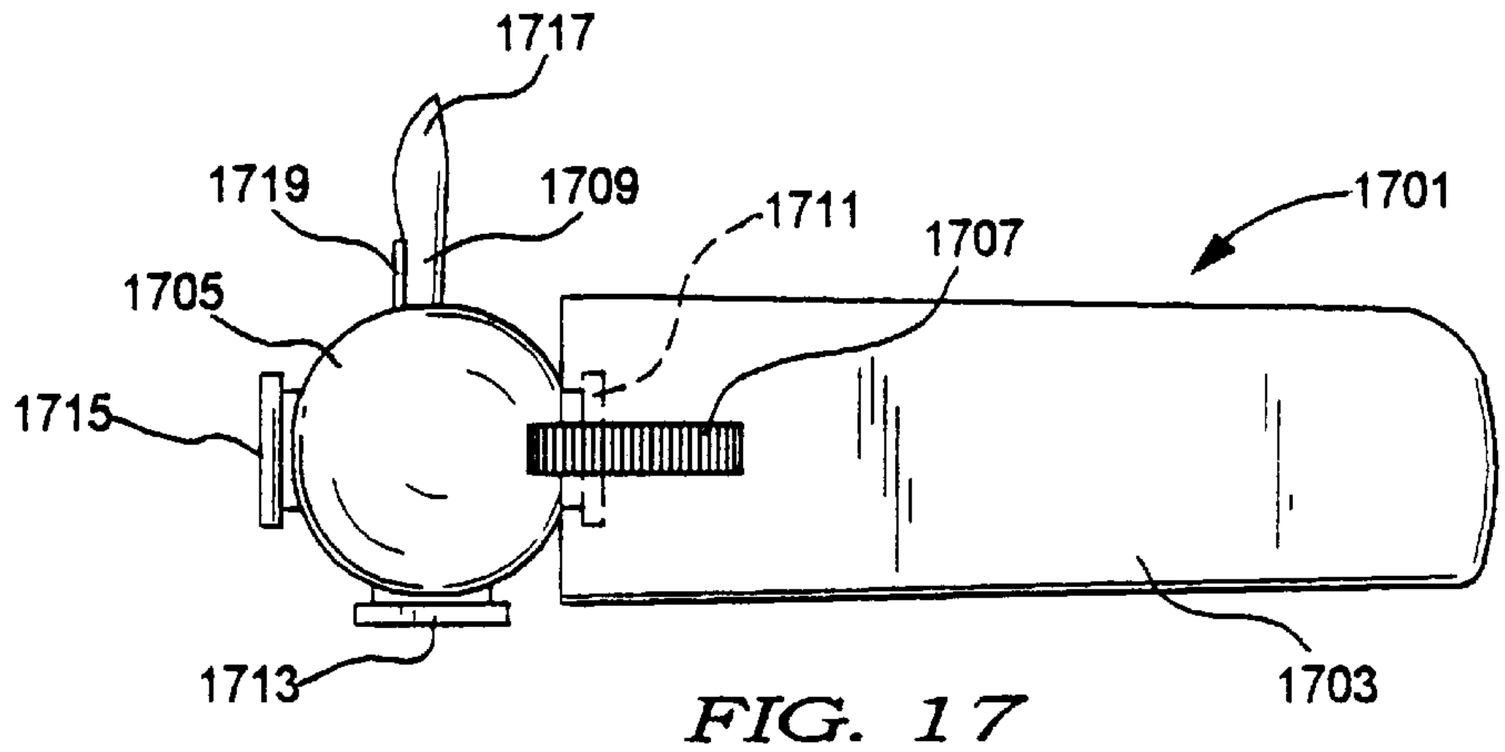


FIG. 17

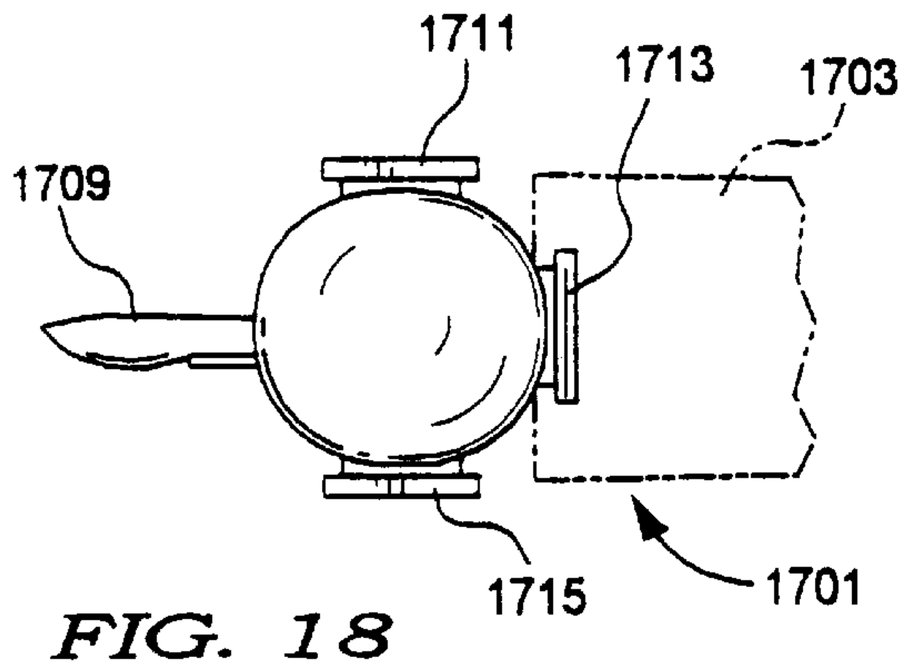


FIG. 18

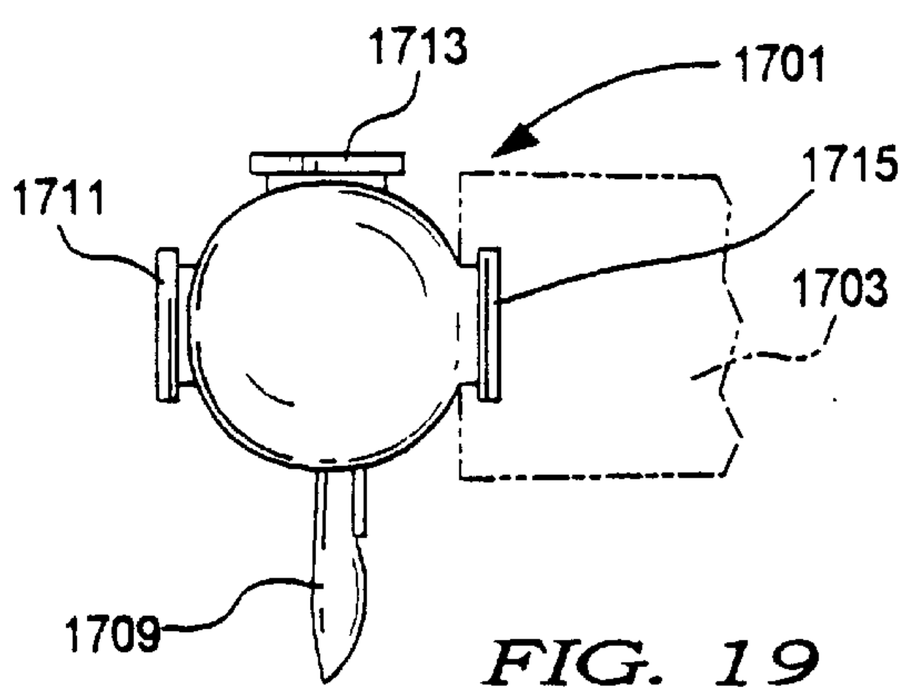


FIG. 19

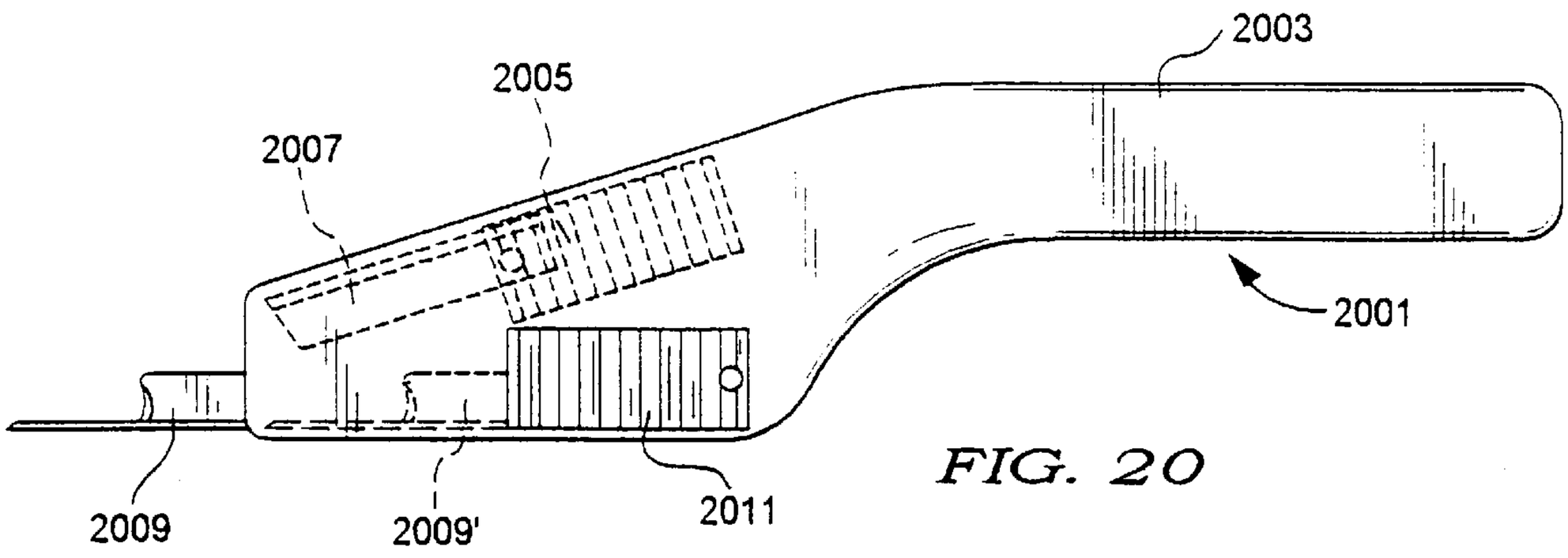


FIG. 20

PLASTIC WRAP PIERCING-CUTTING DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention involves a device for piercing and cutting wrap and other piercable, cuttable materials. More specifically, it involves a unique device with a complex cutting blade which performs rapid, efficient piercing and cutting in a single flow motion.

2. Information Disclosure Statement

U.S. Pat. No. 1,498,753 to Daniel I. Rendlich discloses a carcass opening device having a steel blade with a sharp point on one end and at the other end a flat shank with a flat handle secured on it. Near the handle, there is a branch blade spaced from the main blade with a bead-like element at its end point. A U-shaped curve with continuous sharp edges is formed between the main blade and its branch.

U.S. Pat. No. 2,610,399 to Adams et al. describes and illustrates a ripper for seams having a protected recessed cutting edge with a relatively thin tooth-like probe extending therefrom for insertion between the members to be ripped.

U.S. Pat. No. 2,764,814 to Gustav Jecker discloses a ripping tool having a substantially flat metal shank with two prongs at it ends forming a fork. One of the prongs is elongated and has a pointed end while the other prong is relatively short and has a round enlargement. There are depressions between the prongs which leave a thin countersunk web being inwardly curved and forming a cutting blade.

U.S. Pat. No. 3,028,670 to J. O. Tilly teaches a slitting device having a body portion of generally flat plate-like construction. The body is provided with a slot extending close to one edge and parallel thereto, and in the base of which a removable cutting blade is provided. The blade has a generally hook-shaped cutting edge to prevent jamming of paper or other cut material at an edge of the slot and the blade is further permanently secured to a blade holder removable from the body.

U.S. Pat. No. 3,972,117 to Walter Fogg describes and illustrates a disposable blade device having at one end a pair of spaced blunt unsharpened projections joined by a concave sharpened area and having at its opposite end a blunt point and a narrow stitch picker with a concave edge portion between them.

U.S. Pat. No. 3,975,822 to Richard Mobus discloses a needlepoint and crewel-embroidery stitch remover having a handle secured to a member. The member terminates in a bifurcation with a long tine and a short tine with a cutting surface in the crotch between the tines.

U.S. Pat. No. 5,122,152 to John Mull discloses a suture removing device having a body with a handle portion, a head portion and a cutting edge provided in the handle portion. The head portion has a leading end with a forked tip and a surface extending rearwardly of the tip to the cutting edge.

U.S. Pat. No. 5,297,340 to Hartwig Kahlcke describes and illustrates a parting tool which has and arc shaped blade located between two tines of unequal length to effect a cut. The long tine may have a thorn-like point and the short tine may have a spherical thickening above the blade. The tines pass over into a shaft which is fastened to one end of a shaft holder.

Thus, while various opening and cutting devices have been developed, none teach the complex blade structure having a blade section and a cutting section at substantially right angles to each other of the present invention. Notwithstanding the prior art, the present invention is neither taught nor rendered obvious thereby.

SUMMARY OF THE INVENTION

A piercing-cutting device for plastic wrap removed from an object, which includes a handle, a complex blade connected to the handle, the complex blade having a piercing blade section and a cutting blade section, the piercing blade section and the cutting blade section being at substantially right angles to one another, and the cutting blade section being a concave, crescent cutting blade. In some present embodiments, the piercing blade section and the cutting blade section are located contiguously and establish a generally L-shaped or T-shaped relationship relative to one another, when taken from a frontal view at right angles to the extended length of the complex blade. In other embodiments the handle is elongated with an imaginary centerline and the complex blade is connected to the handle so as to extend outwardly therefrom at a substantially right angle from the imaginary center line. In yet other present embodiments, the piercing-cutting device of the handle has a front and the complex blade extends outwardly from the front of the handle.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention should be more fully understood when the specification herein is taken in conjunction with the drawings appended hereto wherein:

FIG. **1** illustrates a side view of one embodiment of a present invention piercing-cutting device and

FIG. **2** illustrates a top view thereof;

FIGS. **3** and **4** show a side view and a top view of an alternative present invention piercing-cutting device wherein the blade extends outwardly from the front of the handle in a retractable fashion;

FIGS. **5**, **8** and **11** show oblique front views of three different alternative blade embodiments for the present invention piercing-cutting device;

FIGS. **6**, **9** and **12** show side views of each is of these respectively, and

FIGS. **7**, **10** and **13** show top views thereof;

FIG. **14** shows a side view of an alternative blade embodiment of the present invention piercing-cutting device wherein the blade is hingedly connected to the handle to swing in for storage, in a door hinge fashion, and includes a hole for a key chain, and

FIG. **15** shows a top view thereof;

FIG. **16** shows another alternative blade embodiment of the present invention piercing-cutting device with a blade which folds in a jackknife fashion;

FIGS. **17**, **18** and **19** show a present invention piercing-cutting device with an alternative blade embodiment which has a removable blade holder to permit use of the device with alternative blade positions, including right angle right handed, in-line and right angle left handed arrangements; and,

FIG. **20** shows a side view of a present invention combination exacto or straight or razor blade knife piercing-cutting device.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

FIG. **1** shows a side view of the present invention piercing-cutting device **101** and FIG. **2** shows a top view

thereof. Device **101** includes handle **103** which has a base **105** and an ergonomically designed holding portion **107** with a complex blade **109**. Complex blade **109** has an extended piercing blade section **111** and a cutting blade section **113** with a sharpened portion **115**. It is important to note that the cutting blade section **113** of the complex blade **109** used in the present invention has a concave shape to capture the material being cut so as to prevent it from slipping off the blade.

The present invention device **101** is hand held by a user basically as shown in FIG. **1** with base **105** in the horizontal position. A plastic wrapped package such as a compact disc, a music tape, a video movie or the like, is placed on a flat surface and held, or is hand held with one hand and device **101** is held with the other hand, tipped upwardly slightly at the handle end and pushed forward so that piercing blade section **111** pierces the plastic. Next, base **105** is rested on the surface of the package and pushed forward so that cutting blade section **113** cuts through the plastic. This permits certain and fast opening of plastic wrapped packages with minimal or no damage to the package or article.

FIGS. **3** and **4** show a side view and a top view of an alternative present invention piercing-cutting device wherein the blade extends outwardly from the front of the handle in a retractable fashion. FIG. **3** shows present invention piercing-cutting device **301** with handle **303** and complex blade **305**. Retracting thumb lever **313** is shown in the closed position (retracted) with complex blade **305'** nested within a hollow area within handle **303**. FIG. **3** also shows blade **305** extracted illustrating piercing blade section **307** and cutting blade section **309** with sharpened edge **311**. Retracting thumb lever **313** is not shown in FIG. **3** in its open position, but is shown in that position in side view FIG. **4** where identical parts are identically numbered.

Referring now to FIG. **5**, there is shown an oblique front partial view of the present invention piercing-cutting device **501** with handle **503** (partial) and complex blade **505**. FIGS. **6** and **7** show side and top views of device **501**'s complex blade **505**. All three of these figures are discussed collectively. Complex blade **505** is connected to handle **503**, such as by embedding in plastic for a plastic handle, gluing, screwing, force fitting or any other means within the skill of the artisan for attaching blades to handles. Complex blade **505** includes a piercing blade section **507** and a cutting blade section **509** with sharp edge **511** as can be seen from these figures, piercing blade section **507** extends beyond the end of cutting blade section **509** and is at right angles thereto forming a "T" shape arrangement. Note that for safety, cutting blade section **509** has a blunt nose **513** to inhibit accidental cutting by a user. Likewise, because the cutting blade section **509** is located inwardly relative to piercing blade section **507**, the sharpened edge is less likely to cause injury to the user. This is further enhanced by the concavity of cutting blade section **509**.

FIGS. **8**, **9** and **10** show front oblique view, side blade view and top blade view, respectively, of an alternative present invention piercing-cutting device **801**. A partial view of handle **803** is shown in FIG. **8** along with blade **805**. Blade **805** includes a piercing blade section **807** and cutting blade section **809**. In this embodiment flat stock is utilized and cutting blade **809** is partially cut from piercing blade **807** and shaped at a right angle thereto, as shown. Plastic safety bead **813** is then added for safety. Alternatively, a blunt top may be formed as part of the cutting blade section **809** to act in a fashion similar to the plastic safety bead. As can be seen, piercing blade section **807** and cutting blade section **809** form an "L" shape.

FIGS. **11**, **12** and **13** show the same views as above, but of alternative embodiment piercing-cutting device **901**. Device **901** includes handle **903** and complex blade **904**. Complex blade **904** includes piercing blade section **907**, cutting blade section **909**, with sharpened portion **911** and safety bead **913**.

FIG. **14** shows a side view of an alternative blade embodiment of the present invention piercing-cutting device wherein the blade is hingedly connected to the handle to swing in for storage, in a door hinge fashion, and includes a hole for a key chain, and FIG. **15** shows a top view thereof. Referring to the present invention piercing-cutting device **1401** shown in both figures there is shown a flat "credit card" handle **1403**. Attached thereto is hinge **1409** with complex blade **1407** so that blade **1407** may be swung out 90° at hinge **1409**. Complex blade **1407** includes a leading piercing blade section **1413** and a cutting blade section **1411**. Slide safety catch **1415** is included and this may be slid inwardly and outwardly, as shown, to contain complex blade **1407** in its closed position or to permit opening of complex blade **1407** to its cutting position. As shown in FIG. **15**, complex blade **1407** contains thumbnail grooves such as groove **1419** to permit easy opening. Once in the open position as shown in FIG. **15**, a user may use the device by holding handle **1403** and piercing and cutting plastic wrap. Orifice **1417** may be used to insert a key chain or key ring, as the user may desire. Additionally, the height may be reduced to render it more compact, for example, by eliminating handle **1403**'s top third.

FIG. **16** shows a side view of a jackknife-type present invention device **1601** with handle **1603**, complex blade **1605** with piercing blade portion **1607** and cutting blade section **1609**. Device **1601** also includes conventional jackknife blade **1613**. Complex blade **1605** is pivotally hinged on with hinge pin **1611** and may be spring biased as are other jackknife blades and components so as to spring lock into an open or closed position. Likewise, hinge **1409** and complex blade **1407** in FIGS. **14** and **15** could similarly be spring biased.

FIGS. **17**, **18** and **19** show a present invention piercing-cutting device **1701** with an alternative blade embodiment which has a removable blade holder to permit use of the device **1701** with alternative blade positions, including right angle right handed, in-line and right angle left handed arrangements. FIG. **17** shows blade attachment member **1705** connected to handle **1703** with complex blade **1709** positioned for right angle right handed use. Blade attachment member **1705** is removable by latch **1707** and may be taken out and rotated to reposition blade **1709**. Thus, blade attachment member **1705** has socket insert **1711**, **1713** and **1715**, as shown. Complex blade **1709** has piercing blade section **1717** and cutting blade section **1719**, as shown.

FIG. **18** has socket insert **1713** inserted into handle **1703** so that complex blade **1709** is in straight alignment with handle **1703** and FIG. **19** has socket insert **1715** inserted into handel **1703** for right angle left handed use.

FIG. **20** shows present invention device **2001** which operates both as a piercing-cutting device and an exacto or razor blade type knife. Handle **2003** accommodates a razor type cutting blade **2007** with ejector blade **2005** and complex piercing-cutting blade **2009** (shown inserted as **2009'**), which is connected to ejector button **2011**. Razor type cutting blade **2007** and ejector blade **2005** are on the opposite side from complex piercing-cutting blade **2009** and ejector button **2011**. Ejector blade **2005** can have internal position relative to ejector button **2011** so that either razor

type cutting blade **2007** or complex piercing-cutting blade **2009** can be in the open position, but not both at the same time. For example, ejector blade **2005**, in the open position, could block the movement of present invention complex piercing cutting blade **2009** and vice versa. More specifically, the aforesaid ejector buttons could have internal aspects positioned such that only one of them could be moved to the open position at any given time. Thus, device **2001** may be used for piercing and cutting plastic wrap with complex blade **2009** and may be used to slit cardboard packaging and twined packaging and other types of wrappings with straight blade **2007**.

Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

What is claimed is:

1. A piercing-cutting device for plastic wrap removed from an object, which comprises:

(a) a handle;

(b) a complex blade connected to said handle, said complex blade having a flat piercing blade section and a flat cutting blade section, said flat piercing blade section and said flat cutting blade section being at substantially right angles to one another, and said flat cutting blade section having a concave, crescent cutting blade, wherein said flat piercing blade section and said flat cutting blade section are located contiguously and established a generally L-shaped relationship relative to one another.

2. The piercing-cutting device of claim **1** wherein said flat piercing blade section and said flat cutting blade section are integrally, unistructurally formed.

3. The piercing-cutting device of claim **1** wherein said piercing blade section is longer than said cutting blade section and extends outwardly therefrom.

4. The piercing-cutting device of claim **2** wherein said piercing blade section is longer than said cutting blade section and extends outwardly therefrom.

5. The piercing-cutting device of claim **1** wherein said handle has a front and said complex blade extends outwardly from said front of said handle.

6. The piercing-cutting device of claim **1** wherein said device complex blade is a retractable complex blade.

7. The piercing-cutting device of claim **1** wherein said handle is sufficiently hollow to store said blade and said blade is hingedly connected to said handle under tension, such that said handle and complex blade function in a jack knife fashion.

8. The piercing-cutting device of claim **1** wherein said handle is sufficiently hollow to store said blade and said blade is hingedly connected to said handle, such that said handle and complex blade function in a door hinge fashion.

9. A piercing-cutting device for plastic wrap removed from an object, which comprises:

(a) a handle;

(b) a complex blade connected to said handle, said complex blade having a flat piercing blade section and a flat cutting blade section, said flat piercing blade section and said flat cutting blade section being at substantially right angles to one another, and said flat cutting blade section having a concave, crescent cutting blade, wherein said flat piercing blade section and said flat cutting blade section are located contiguously and establish a generally T-shaped relationship relative to one another.

10. The piercing-cutting device of claim **9** wherein said flat piercing blade section and said flat cutting blade section are integrally, unistructurally formed.

11. The piercing-cutting device of claim **9** wherein said piercing blade section is longer than said cutting blade section and extends outwardly therefrom.

12. The piercing-cutting device of claim **10** wherein said piercing blade section is longer than said cutting blade section and extends outwardly therefrom.

13. The piercing-cutting device of claim **9** wherein said handle has a front and said complex blade extends outwardly from said front of said handle.

14. The piercing-cutting device of claim **9** wherein said device complex blade is a retractable complex blade.

15. The piercing-cutting device of claim **9** wherein said handle is sufficiently hollow to store said blade and said blade is hingedly connected to said handle under tension, such that said handle and complex blade function in a jack knife fashion.

16. The piercing-cutting device of claim **9** wherein said handle is sufficiently hollow to store said blade and said blade is hingedly connected to said handle, such that said handle and complex blade function in a door hinge fashion.

17. A piercing-cutting device for plastic wrap removed from an object, which comprises:

(a) a handle;

(b) a complex blade connected to said handle, said complex blade having a flat piercing blade section and a flat cutting blade section, said flat piercing blade section and said flat cutting blade section being at substantially right angles to one another, and said flat cutting blade section having a concave, crescent cutting blade, wherein said flat piercing blade section and said flat cutting blade section are located contiguously to one another; and,

(c) a blade holder component for indirect, removable, connection of said complex blade to said handle, and wherein said handle and blade holder component each have complimentary connecting means for removably connecting said blade holder component to said handle.

18. The piercing-cutting device of claim **17** wherein said blade holder component has a plurality of connecting means to enable removal of said blade holder component from said handle and reattachment thereto with a different connecting means to enable a user to have choice of positioning of said blade relative to said handle for optimum use by left-handed user and, alternatively, by a right-handed user.

19. The piercing-cutting device of claim **18** wherein said piercing blade section and said cutting blade section are located contiguously and established a generally L-shaped relationship relative to one another.

20. The piercing-cutting device of claim **18** wherein said piercing blade section and said cutting blade section are located contiguously and establish a generally T-shaped relationship relative to one another, with said cutting blade section establishing the base of the T.

* * * * *